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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,040	07/05/2001	Young Woo Yoon	K-280	2570
34610	7590	10/12/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			TORRES, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/898,040

Applicant(s)

YOON ET AL.

Examiner

Joseph D. Torres

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43-47, 49-56, 58-60 and 83-103 is/are pending in the application.
- 4a) Of the above claim(s) 56, 58-60, 86-97, 99, 102 and 103 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-47, 49-55, 83-85, 98, 100 and 101 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/29/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I (claims 43-47, 49-55, 83-85, 98 and 100) in the reply filed on 08/15/2005 is acknowledged. The traversal is on the ground(s) that "It is respectfully submitted that the subject matter of each of the designated inventions is sufficiently related that a thorough search for the subject matter of each of the designated inventions would encompass a search for the subject matter of the remaining designated inventions. Thus, it is respectfully submitted that the search and examination of the entire application could be made without serious burden". This is not found persuasive because claim 43 is directed to inputting bits to an encoder at a fixed rate ("the encoder having a prescribed code rate") whereas claim 56 is directed to adaptively inputting bits to an encoder at different rates. A proper search for Group I requires a search of subclasses 714/774 and 714/790 comprising 397 patents and published applications, proper search for Group II requires a search of subclasses 714/822 and 714/790 comprising 316 patents and published applications, 162 of which are not found in the search for Group I.

The requirement is still deemed proper and is therefore made FINAL.

Claims 56, 58-60, 86-97, 99, 102 and 103 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 08/15/2005.

This application contains claims 56, 58-60, 86-97, 99, 102 and 103 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Drawings***

2. The Applicant contends, "Upon the Patent Office providing more detailed information regarding the Figure that needs to be corrected, replacement sheets will be provided to comply with this objection. It seems that the objection paragraphs are generic paragraphs without any detail as to what Figure is objected to".

The Applicant is not using the same numbers in the specification as in the drawings. To be consistent, for example, the Applicant should either use s41 or 41 in both the specification and the drawings.

### ***Specification***

3. The disclosure is objected to because of the following informalities: Claim 43 recites new matter, "providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate; adapting the prescribed code rate of the encoder and providing coded bits, based on an adapted code rate, to an output of the encoder, the prescribed code rate being adapted to the adapted code rate for providing a coding gain", which can have various interpretations some of which are not supported by the Applicants specification and the language itself is contradictory in

nature. The Examiner would like to point out that that the first limitation of claim 43 ("providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate") indicates that the encoder has a prescribed rate. That of course is expected. That is, generally in the art, encoders, by design, are fixed rate, the rate being determined by the encoding algorithm used. The second limitation of claim 43 appears to either claim an adaptive encoder. The Examiner would like to point out that that an adaptive encoder requires either 1) the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder, 2) the encoder is followed or preceded by an additional rate matching device (a rate matching device in addition to the rate matching device claimed in lines 8-10 of claim 43) or 3) the encoder is rate matched to itself, i.e., it does nothing. Nowhere in the specification does the Applicant teach an encoder made up of several encoders having different rates and a device or control for selecting the particular encoder. Paragraph [65] on page 22 indicates that the encoder is a fixed rate encoder and the encoding rate is a design feature used to select the particular encoder during the design of the system; hence the interpretation that the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder is not supported by the specification and would lead to enablement issues. If the Applicant is intending the first interpretation, the Examiner has to ask whether the Applicant is trying claim design features, which would be inappropriate since claim 43 is a method of rate adaptation, not a method for designing a rate adaptation system. As per the second interpretation, nowhere in the specification does

the Applicant teach an encoder including a rate-matching device that is also followed by another rate matching device. Figures 2-5 only teach a fixed rate encoder, the rate being a design feature selected during design followed by a single rate-matching device; hence the interpretation that the encoder is followed or preceded by an additional rate-matching device is not supported by the specification and would lead to enablement issues.

Appropriate correction is required.

#### ***Response to Arguments***

4. Applicant's arguments filed 08/15/2005 have been fully considered but they are not persuasive.

The Applicant contends, "Independent claims 43 and 56 have been amended to more clearly recite the coupling between the elements and/or features recited in those claims. Further, such recitation would overcome any potential rejection based on newly cited reference provided during the interview, i.e., Park et al. (U.S. Patent No. 6,397,367). Hence, withdrawal of the §102 and §103 election is respectfully requested".

The Examiner would like to point out that MPEP §714.04 states "In the consideration of claims in an amended case where no attempt is made to point out the patentable novelty, the claims should not be allowed. See 37 CFR 1.111 and MPEP § 714.02.

An amendment failing to point out the patentable novelty which the applicant believes the claims present in view of the state of the art disclosed by the references cited or the

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objections made may be held to be not fully responsive and a time period set to furnish a proper reply if the statutory period has expired or almost expired (MPEP § 714.03).

**However, if the claims as amended are clearly open to rejection on grounds of record, a final rejection should generally be made** [Emphasis Added].

However in the interest of speeding up prosecution on the case, the Examiner would also like to point out some very severe deficiencies in the currently amended claim 43. Claim 43 recites, "providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate; adapting the prescribed code rate of the encoder and providing coded bits, based on an adapted code rate, to an output of the encoder, the prescribed code rate being adapted to the adapted code rate for providing a coding gain", which can have various interpretations some of which are not supported by the Applicants specification and the language itself is contradictory in nature. The Examiner would like to point out that that the first limitation of claim 43 ("providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate") indicates that the encoder has a prescribed rate. That of course is expected. That is, generally in the art, encoders, by design, are fixed rate, the rate being determined by the encoding algorithm used. The second limitation of claim 43 appears to either claim an adaptive encoder. The Examiner would like to point out that that an adaptive encoder requires either 1) the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder, 2) the encoder is followed or preceded by an additional rate

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matching device (a rate matching device in addition to the rate matching device claimed in lines 8-10 of claim 43) or 3) the encoder is rate matched to itself, i.e., it does nothing. Nowhere in the specification does the Applicant teach an encoder made up of several encoders having different rates and a device or control for selecting the particular encoder. Paragraph [65] on page 22 indicates that the encoder is a fixed rate encoder and the encoding rate is a design feature used to select the particular encoder during the design of the system; hence the interpretation that the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder is not supported by the specification and would lead to enablement issues. If the Applicant is intending the first interpretation, the Examiner has to ask whether the Applicant is trying claim design features, which would be inappropriate since claim 43 is a method of rate adaptation, not a method for designing a rate adaptation system. As per the second interpretation, nowhere in the specification does the Applicant teach an encoder including a rate-matching device that is also followed by another rate matching device. Figures 2-5 only teach a fixed rate encoder, the rate being a design feature selected during design followed by a single rate-matching device; hence the interpretation that the encoder is followed or preceded by an additional rate-matching device is not supported by the specification and would lead to enablement issues.

The Examiner would also like to point out that the terms “adapting” and “adapted code rate” are relative terms and meaningless unless they are tied to some other element in



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the communication channel to gauge a difference between the encoder's prescribed code rate, that is, there is no indication anywhere in the claim that the recited "adapted code rate" is any different from the "prescribed code rate" and any encoder inherently has a coding gain. Since the only rate mentioned in the limitation in lines 5-7 of claim 43 is the coding rate of the encoder itself, since interpretations 1 and 2, above, lead to various 112 issues and in the interest of speeding up prosecution on the case, the Examiner assumes interpretation 3, the encoder is rate matched to itself, i.e., it does nothing.

The Examiner disagrees with the applicant and maintains all rejections of claims 43-47, 49-55, 83-85, 98 and 100. All amendments and arguments by the applicant have been considered. It is the Examiner's conclusion that claims 43-47, 49-55, 83-85, 98 and 100 are not patentably distinct or non-obvious over the prior art of record in view of the references, Katsuragawa; Hiroshi et al. (US 5907586 A, hereafter referred to as Katsuragawa) in view of Erozy; Mustafa et al. (US 6370669 B1, hereafter referred to as Erozy) as applied in the last office action, filed 01/05/2005. Therefore, the rejection is maintained.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 43-47, 49-55, 83-85, 98, 100 and 101 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 43 recites new matter, "providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate; adapting the prescribed code rate of the encoder and providing coded bits, based on an adapted code rate, to an output of the encoder, the prescribed code rate being adapted to the adapted code rate for providing a coding gain", which can have various interpretations some of which are not supported by the Applicants specification and the language itself is contradictory in nature. The Examiner would like to point out that that the first limitation of claim 43 ("providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate") indicates that the encoder has a prescribed rate. That of course is expected. That is, generally in the art, encoders, by design, are fixed rate, the rate being determined by the encoding algorithm used. The second limitation of claim 43 appears to either claim an adaptive encoder. The Examiner would like to point out that that an adaptive encoder requires either 1) the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder, 2) the encoder is followed or preceded by an additional rate matching device (a rate matching device in addition to the rate matching device claimed in lines 8-10 of claim 43) or 3) the encoder is rate

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matched to itself, i.e., it does nothing. Nowhere in the specification does the Applicant teach an encoder made up of several encoders having different rates and a device or control for selecting the particular encoder. Paragraph [65] on page 22 indicates that the encoder is a fixed rate encoder and the encoding rate is a design feature used to select the particular encoder during the design of the system; hence the interpretation that the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder is not supported by the specification and would lead to enablement issues. If the Applicant is intending the first interpretation, the Examiner has to ask whether the Applicant is trying claim design features, which would be inappropriate since claim 43 is a method of rate adaptation, not a method for designing a rate adaptation system. As per the second interpretation, nowhere in the specification does the Applicant teach an encoder including a rate-matching device that is also followed by another rate matching device. Figures 2-5 only teach a fixed rate encoder, the rate being a design feature selected during design followed by a single rate-matching device; hence the interpretation that the encoder is followed or preceded by an additional rate-matching device is not supported by the specification and would lead to enablement issues.

The Examiner would also like to point out that the terms "adapting" and "adapted code rate" are relative terms and meaningless unless they are tied to some other element in the communication channel to gauge a difference between the encoder's prescribed code rate, that is, there is no indication anywhere in the claim that the recited "adapted

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code rate" is any different from the "prescribed code rate" and any encoder inherently has a coding gain. Since the only rate mentioned in the limitation in lines 5-7 of claim 43 is the coding rate of the encoder itself, since interpretations 1 and 2, above, lead to various 112 issues and in the interest of speeding up prosecution on the case, the Examiner assumes interpretation 3, the encoder is rate matched to itself, i.e., it does nothing.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 43-47, 49-55, 83-85, 98, 100 and 101 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 43 recites new matter, "providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate; adapting the prescribed code rate of the encoder and providing coded bits, based on an adapted code rate, to an output of the encoder, the prescribed code rate being adapted to the adapted code rate for providing a coding gain", which can have various interpretations some of which are not supported by the Applicants specification and the language itself is contradictory in nature. The Examiner would like to point out that that the first limitation of claim 43 ("providing information bit-bits of a prescribed data rate to an input of an encoder, the encoder having a prescribed code rate") indicates that the encoder has a prescribed rate. That of course is expected. That is, generally in the art,

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encoders, by design, are fixed rate, the rate being determined by the encoding algorithm used. The second limitation of claim 43 appears to either claim an adaptive encoder. The Examiner would like to point out that that an adaptive encoder requires either 1) the encoder be made up of several encoders having different rates and a device or control for selecting the particular encoder, 2) the encoder is followed or preceded by an additional rate matching device (a rate matching device in addition to the rate matching device claimed in lines 8-10 of claim 43) or 3) the encoder is rate matched to itself, i.e., it does nothing. Claim 43 is indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 43-45, 84, 85 and 101 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsuragawa; Hiroshi et al. (US 5907586 A, hereafter referred to as Katsuragawa).

35 U.S.C. 102(b) rejection of claims 43-45, 84 and 85.

See the Non-Final Action filed 01/05/2005 for detailed action of prior rejections.

35 U.S.C. 102(b) rejection of claim 101.

Col. 1, lines 39-41 in Katsuragawa.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 46, 47, 49-55, 83, 98 and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuragawa; Hiroshi et al. (US 5907586 A, hereafter referred to as Katsuragawa) in view of Ero; Mustafa et al. (US 6370669 B1, hereafter referred to as Ero).

35 U.S.C. 103(a) rejection of claims 46, 47, 49-56, 58-60, 83 and 87-97.

See the Non-Final Action filed 01/05/2005 for detailed action of prior rejections.

35 U.S.C. 103(a) rejection of claim 98.

Col. 1, lines 23-27 in Eroz.

35 U.S.C. 103(a) rejection of claim 100.

Col. 2, lines 43-51 in Eroz.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

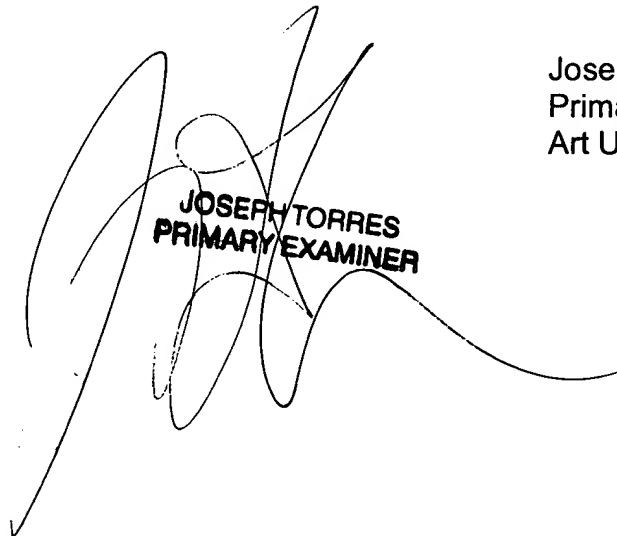
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A large, stylized handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

Joseph D. Torres, PhD  
Primary Examiner  
Art Unit 2133

**JOSEPH TORRES  
PRIMARY EXAMINER**